

Test Date: _____
Room Number: _____

Practice Final Exam
MPC 092

This is a practice final exam. It is suggested you allot yourself 2 hours and take the practice exam under exam conditions. Questions on this practice final exam may be different and include topics not found on the actual final exam and vice-versa. The actual final exam will contain 30 multiple choice questions, which count for 30% of the overall grade in MPC 092.

Your instructor will notify you of the exact date and room number of your exam. This is the only time the exam will be given-NO EXCEPTIONS! Please show up at least 15 minutes early so score cards can be handed out and so the test starts on time.

You must receive a score of 65% or better (that's 20 questions) in order to enroll in any BBCC class for which MPC 092 is a prerequisite. You may retake the exam once (if needed) to prove competency for entrance into MPC 093 (Algebra II) or other class that requires MPC 092, however, a retake will not affect your grade in MPC 092.

The results of the final will be available in the Math/Science Resource Center **no sooner than 10:00 A.M. the day following the test.** Results will not be available sooner nor will they be given out over the phone-**you must pick up your results in person.**

Retake times will be available with the test results.

IMPORTANT

The only items that you will be allowed to keep with you are a calculator, a couple of #2 pencils and an eraser. You may not use a cell phone calculator, a programmable calculator or a graphing calculator. All handbags, book bags, books, cell phones, etc. will be left at the front of the testing room. It is recommended that you bring as little as possible with you.

This sample final is designed to guide your review efforts. It is not intended to be the sole source of review. Be sure to refer back to the original course materials, handouts, and lecture notes for a complete review.

Answers

Question	Answer	Sections
1	B	5.1
2	C	5.1, 5.2
3	C	5.1, 5.2
4	B	Scientific Notation Wkst
5	B	5.3
6	B	5.4, 5.5
7	B	5.5, 5.6
8	A	5.7
9	B	5.7
10	A	6.1
11	A	6.2
12	B	6.2
13	C	6.2
14	A	6.5
15	C	6.5
16	B	6.3
17	C	6.4
18	A	6.4
19	D	6.6
20	C	7.1
21	C	7.1
22	A	7.2
23	A	7.2
24	D	7.3
25	D	7.4
26	C	7.4
27	A	7.5
28	D	7.6
29	C	7.7
30	D	Dim Analysis Wkst

Practice Final Exam

1. Simplify: $\left(\frac{4a^2b^3}{8a^4b^2}\right)^3$
 - a) $\frac{8b}{a^2}$
 - b) $\frac{b^3}{8a^6}$
 - c) $8a^6b^3$
 - d) $\frac{b^3}{6a^5}$
 - e) None of the above

2. Simplify: $\frac{2a^{-2}b^4}{9} - (3ab^{-2})^{-2}$
 - a) $-\frac{52b^4}{9a^2}$
 - b) $-\frac{79a^2}{b^4}$
 - c) $\frac{b^4}{9a^2}$
 - d) $2a^2b^4 - 3a^{-2}b^4$
 - e) None of the above

3. Simplify: $\left(\frac{18x^{-2}y^7z^0}{6x^2y^4z^{-3}}\right)^{-2}$
 - a) $\frac{1}{9y^6z^6}$
 - b) 1
 - c) $\frac{x^8}{9y^6z^6}$
 - d) $-\frac{6x^4}{y^6z^5}$
 - e) None of the above

4. Which of the following is a true statement?
 - a) $(1.70 \times 10^{-8})^2 = 2.89 \times 10^{16}$
 - b) $(5.18 \times 10^{25})(1.25 \times 10^{-23}) = 6.475 \times 10^2$
 - c) $-0.00076 = 7.6 \times 10^4$
 - d) $\frac{2.4 \times 10^{16}}{(1.2 \times 10^{-8})(2.0 \times 10^{14})} = 4.0 \times 10^{22}$
 - e) None of the above

5. Simplify: $(9c^2d + 7cd - 12d^3) - (3c^2 - 8cd + 4d^3)$
- a) $9c^2d - 3c^2 - cd - 8d^3$
 - b) $9c^2d - 3c^2 + 15cd - 16d^3$
 - c) $6c^2 + 15cd - 8d^3$
 - d) $9d + cd + 16d^3$
 - e) None of the above
6. Multiply: $2xy^2(x^2 + 3y)(5x^2 - 8y)$
- a) $20x^6y^4 + 28x^4y^5 - 96x^2y^6$
 - b) $10x^5y^2 + 14x^3y^3 - 48xy^4$
 - c) $10x^5y^2 - 48xy^4$
 - d) $2x^3y^2 + 30x^3y^3 - 48xy^4$
 - e) None of the above
7. Multiply: $2a(5a + 7b)^2$
- a) $50a^3 + 98b^2$
 - b) $50a^3 + 140a^2b + 98ab^2$
 - c) $100a^4 + 280a^3b + 196a^2b^2$
 - d) $10a^2 + 70a^2b + 91ab^2$
 - e) None of the above
8. Divide: $\frac{8a^2b^2 + 4ab^2 - 12ab}{-4ab^2}$
- a) $-2a - 1 + \frac{3}{b}$
 - b) $-2a - 1$
 - c) $8^2b^2 - 12ab$
 - d) $2a + 1 + \frac{3}{b}$
 - e) None of the above

9. Find the remainder: $\frac{2x^3+3x^2-2}{x+3}$

- a) -2
- b) -29
- c) 25
- d) 7
- e) None of the above

10. Factor completely: $35x^4y^5z + 7x^2yz - 49x^3yz^3$

- a) $7x^2yz(5x^2y^4 + 1 - 7xz^2)$
- b) $7x^2yz(5x^2y^4 - 7xz^2)$
- c) $-7x^9y^7z^5$
- d) $7x^2yz(5x^2y^4z + 7x^2yz - 49x^3yz^3)$
- e) None of the above

11. Factor: $ax - 2ay + 2bx - 4by$

- a) $(a + 2b)(x - 2y)$
- b) $(a + b)(2x - 4)$
- c) $(a - 2b)(x - 2y)$
- d) Prime, No factors
- e) None of the above

12. Factor completely: $64x^2 - 176xy + 121y^2$

- a) $(4x + 11y)(16x - 11y)$
- b) $(8x - 11y)(8x - 11y)$
- c) $(16x + 11y)(4x - 11y)$
- d) $(8x + 11y)(8x - 11y)$
- e) None of the above

13. Factor completely: $121a^3b^2 - a$

- a) $a(121a^2b^2 - 1)$
- b) Prime – can't be factored
- c) $a(11ab + 1)(11ab - 1)$
- d) $a(11ab - 1)^2$
- e) None of the above

14. Factor: $16x^3 + 2y^3$

- a) $2(2x + y)(4x^2 - 2xy + y^2)$
- b) $2(2x + y)^3$
- c) $2(2x + y)(4x^2 + y^2)$
- d) $2(2x - y)(4x^2 + 2xy + y^2)$
- e) None of the above

15. Factor completely: $2y^4 - 16y$

- a) $2(y^2 + 4)(y + 2)(y - 2)$
- b) $2y(y - 2)^2$
- c) $2y(y - 2)(y^2 + 2y + 4)$
- d) $2y(y - 2)(y^2 + 4)$
- e) None of the above

16. Factor: $x^2 - 5x - 6$

- a) $(x - 2)(x - 3)$
- b) $(x - 6)(x + 1)$
- c) $(x + 6)(x - 1)$
- d) $x(x - 5) - 6$
- e) None of the above

17. Factor: $15t^2 - 79t - 34$

- a) $(5t + 17)(3t - 2)$
- b) $(5t - 2)(3t + 17)$
- c) $(5t + 2)(3t - 17)$
- d) $(5t - 17)(3t + 2)$
- e) None of the above

18. Factor completely: $24a^3b^2 - 4a^2b^3 - 8ab^4$

- a) $4ab^2(3a - 2b)(2a + b)$
- b) $4ab^2(6a^2 - ab + 2b^2)$
- c) $(6a^2 - 8ab)(2ab^2 + b^3)$
- d) $ab^2(6a - 4b)(4a + 2b)$
- e) None of the above

19. Solve for x: $(x - 3)^2 = (2x + 1)^2 + 11$

- a) $x = -3, -\frac{1}{2}$
- b) $x = 3, -\frac{1}{2}$
- c) $x = 3, -\frac{1}{3}$
- d) $x = -3, -\frac{1}{3}$
- e) None of the above

20. Find the number(s) that can not be used in place of the variable 'a' in $\frac{3a+5}{2a^2-9a-18}$

- a) $a \neq 0$
- b) $a \neq -\frac{5}{3}$
- c) $a \neq -\frac{3}{2}, 6$
- d) $a \neq -\frac{5}{3}, -\frac{3}{2}, 6$
- e) None of the above

21. Reduce to the lowest terms: $\frac{18a^2+60a+50}{9a^2-25}$

- a) $60a + 4$
- b) -2
- c) $\frac{2(3a+5)}{3a-5}$
- d) $\frac{2}{3a-5}$
- e) None of the above

22. Multiply and reduce: $\frac{a^2-9b^2}{20a^2+10ab} \cdot \frac{10a^4+35a^3b+15a^2b^2}{2a^3-12a^2b+18ab^2}$

- a) $\frac{(a+3b)^2}{4(a-3b)}$
- b) $\frac{a+3b}{4}$
- c) $\frac{1}{4(a-3b)}$
- d) $4(a-3b)$
- e) None of the above

23. Divide and reduce: $\frac{25x^2-1}{12x^2-30x} \div \frac{5x^2-14x-3}{2x^2-11x+15}$

- a) $\frac{5x-1}{6x}$
- b) $\frac{5x+1}{6x}$
- c) $\frac{2x-5}{x-3}$
- d) $\frac{4x+3}{6}$
- e) None of the above

24. Find the LCD of $\frac{y}{(y+5)(y-5)}, \frac{5}{(y-5)^2}, \frac{1}{5(y+5)}$

- a) $5(y+5)^2(y-5)^2$
- b) $25y$
- c) $5y(y+5)(y-5)$
- d) $5(y+5)(y-5)^2$
- e) None of the above

25. Combine and simplify: $\frac{5x^2+4x}{x^2+2x} + \frac{7x+3}{x^2+2x} - \frac{5-x^2}{x^2+2x}$

- a) $\frac{9x^3+10x-5x^2}{x^2+2x}$
- b) $\frac{4x^2+11x-2}{x(x+2)}$
- c) $\frac{13}{6x}$
- d) $\frac{6x-1}{x}$
- e) None of the above

26. Combine and simplify: $\frac{1}{x^2-x-2} - \frac{3}{x^2+2x+1}$

- a) $\frac{-2}{2x^2+x-1}$
- b) $\frac{-2x-5}{(x+1)^2(x-2)}$
- c) $\frac{-2x+7}{(x+1)^2(x-2)}$
- d) $\frac{x^2-x+7}{(x+1)^3(x-2)}$
- e) None of the above

27. Simplify: $\frac{\frac{a}{b} \cdot \frac{b}{a}}{\frac{1}{b^2} \cdot \frac{1}{a^2}}$

- a) ab
- b) $\frac{ab}{a^2-b^2}$
- c) $\frac{a^2+ab+b^2}{a+b}$
- d) $\frac{a^2+b^2}{a^2-b^2}$
- e) None of the above

28. Solve for y : $\frac{y}{y-5} - \frac{2}{y+3} = \frac{16}{y^2-2y-15}$

- a) No Solution
- b) $y = -3$
- c) $y = 2, y = -3$
- d) $y = 2$
- e) None of the above

29. A radio receiver weighing 40 pounds on earth weighs only 6.4 lb on the moon. How much does a receiver weigh on earth if it weighs 20 lb on the moon?

- a) 12.8 lb
- b) 3.2 lb
- c) 125 lb
- d) 128 lb
- e) None of the above

30. Convert $\frac{20 \text{ feet}}{\text{second}}$ into $\frac{\text{meters}}{\text{minute}}$. Answers have been rounded. (1 meter = 3.281 feet)

- a) $285.6 \frac{\text{meters}}{\text{minute}}$
- b) $1.094 \frac{\text{meters}}{\text{minute}}$
- c) $3937 \frac{\text{meters}}{\text{minute}}$
- d) $365.7 \frac{\text{meters}}{\text{minute}}$
- e) None of the above